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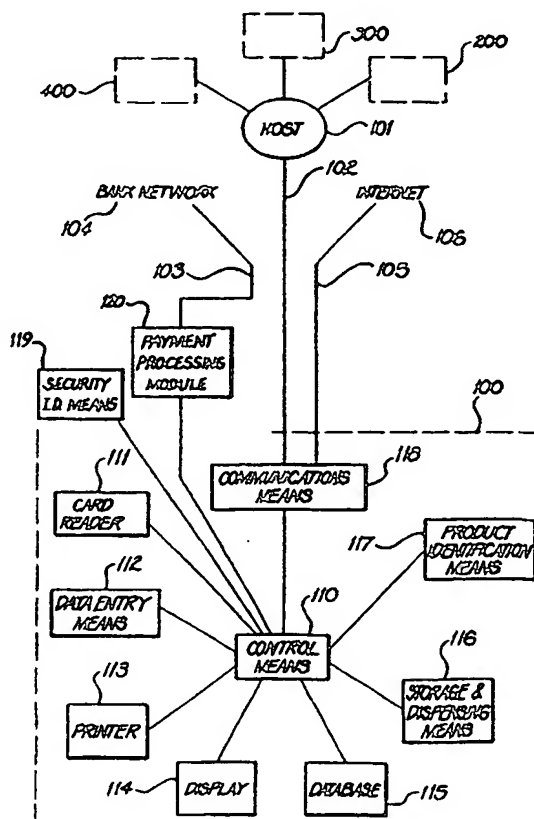
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(21) International Application Number: PCT/AU98/00655 (22) International Filing Date: 19 August 1998 (19.08.98) (30) Priority Data: PO 8673 19 August 1997 (19.08.97) AU (71) Applicant (for all designated States except US): IMAGING TECHNOLOGIES PTY. LIMITED [AU/AU]; 110 Alexander Road, Crows Nest, NSW 2065 (AU). (72) Inventor; and (75) Inventor/Applicant (for US only): SMITH, Gower [NZ/AU]; Imaging Technologies Pty. Limited, 110 Alexander Road, Crows Nest, NSW 2065 (AU). (74) Agent: GRIFFITH HACK; G.P.O. Box 4164, Sydney, NSW 2001 (AU).			(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published With international search report.

(54) Title: REMOTE ELECTRONIC RETAILING

(57) Abstract

A product ordering apparatus (i.e. electronic retailing or vending machine) having controller, and input means for product selection, a security identification means (i.e. access card, credit card, driver's licence), and means for enabling or disabling delivery of products (goods) based on the security information (i.e. sufficient credit, age). Wherein further, the product ordering can be executed over a communications network such as the Internet. Payment processing being completed via separate secure payment network. The apparatus also providing for any duty or tax, dependant on the geographic region, to be automatically added to the sale price of the order.



"REMOTE ELECTRONIC RETAILING"

The present invention relates generally to the automated provision of goods/services and, particularly, to electronic retailing and vending and the provision of goods/services at vending site and/or over a communications media.

The present applicants have developed electronic vending apparatus and also apparatus for facilitating electronic retailing over networks such as the Internet.

Examples of prior systems are disclosed in applicant's International patent applications numbers PCT/AU93/00416 (WO94/04446), PCT/AU95/00154 (WO95/26004) and PCT/AU97/00058. The disclosures of these documents are incorporated herein by reference. PCT/AU93/00416 relates

to a vending machine which facilitates recycling of complex articles, such as printer and toner cartridges. PCT/AU95/00154 discloses an electronic catalogue device and system for enabling remote ordering of goods/services. PCT/AU97/00058 discloses a system for the electronic remote ordering of goods/services comprising a network of electronic vending machines and/or PC's and/or dedicated ordering kiosks via which products (goods and/or services) can be electronically ordered remotely, and via which stocking of vending machines can be monitored and controlled.

It is known to retail goods and services over communications networks such as the Internet. For example, a user may purchase information services by logging onto the Internet and accessing a site from which services such as information, computer software, etc. can be purchased. There are a number of problems with this system.

Firstly, there are no or limited controls to control access to purchase of products over the Internet. For example, there are really no adequate controls preventing young people from accessing and obtaining information which is normally of a category restricted for minors. This is

arranged to establish the age of a person using the apparatus and the means for enabling is arranged to determine whether the person is old enough to obtain the goods/services that they wish to order. Where the products
5 being ordered are security sensitive, such as passports, tickets, licenses or the like, the security identification means may need to establish the exact identity of the person. The security means in this case may require information such as a driver's license and PIN number and
10 other security information, in a similar way to the way a bank requires exact identity information.

Preferably, a sensing device is provided for reading a driver's license, identity card, bar code or other ID device which contains the required security information.

15 Alternatively, or in addition, the apparatus may have access to a database which contains information enabling verification of security information, such as age or other authorisation characteristics, once a user of the machine has been identified. In such a case the security
20 identification means may merely establish the identity of the person by reading a credit card for example or smartcard/PIN number combination. The database is then accessed to obtain further security information.

The ordering apparatus may, alternatively or
25 additionally to the communication means, also include a means for delivering goods on site such as described in the applicant's previous applications. The delivery of the goods on site will be controlled depending upon the security information, as with services, goods, information,
30 etc. ordered over the communications network.

In other words the apparatus may operate as a vending machine. The vending machine may be stand-alone, or may be connectable to a communications network over which goods/services can be ordered for delivery in addition to
35 the local vending operation.

product, on payment.

The product ordering apparatus may also include dedicated kiosk, which is also connectable to a communications network such as the Internet. Where the
5 ordering apparatus includes combined ordering apparatus and vending device, the device may also be connected to a communications network (eg. Internet) and products available at other locations may be ordered from the ordering apparatus. Information on the locality of the
10 product will be provided to the user and the tax and duty will be levied in accordance with that locality.

Even where goods are ordered over the Internet, therefore, across a state border or even worldwide, the appropriate tax or duty rate can be levied at the delivery
15 location/apparatus. The means for enabling payment preferably comprises a card reader or the like for reading details of a credit card or bankcard. Preferably, payment is effected by way of a separate payment network, such as an EFT network or the like or e.g. via the Internet any set
20 standard.

Alternatively, a means for payment may be provided at the delivery apparatus itself, i.e. at the location where the product is available. A person may be able to order and secure product by ordering at a remote ordering
25 apparatus, and attend the location where the product is held and pay at that location. In this case, the delivery apparatus (which may be a combined ordering/vending apparatus) includes information on the appropriate tax or duty to be levied.

30 When the user orders the product and secures it before attending the locality where the product is, the user may be provided with security means, such as a PIN number. The user then attends at the device where the product is held and enters the PIN number or other security means to enable
35 the product to be released to him. Payment can be effected either at the original ordering device (which may be a PC

database of leviable tax/duty.

Preferably, the ordering apparatus may be only of any type discussed in the applicant's earlier patent applications referenced above.

5 From a further aspect the present invention provides a method of applying tax or duty in remote retailing of products, comprising the steps of storing information on tax or duty and enabling access by an ordering apparatus to that information, and adjusting the sales price of products
10 offered for order at the ordering apparatus in accordance with the tax or duty information; relating to the location of the products.

Preferably, the method also includes the step of only enabling sale or order of product when tax or duty has been
15 applied.

From yet a further aspect, the present invention provides a product ordering apparatus, including a control means for controlling ordering of products, services, input means by which a user may select product, and payment
20 processing means for processing payment by a user by a separate and secure payment processing network, the payment processing means including an input means for inputting secure user account information, and means for enabling or disabling an order on processing of a user payment via the
25 separate network.

The separate network may be an EFT or the like type payment processing network. The advantage of using a secure, separate network for processing payments is that the chances of fraud or theft are reduced.

30 The apparatus preferably includes a communication means for connection to a communications network such as the Internet, for example. Via the communications network goods/services can be ordered over the network but there is no need for payment to be made over the network, as payment
35 is made by the separate, secure network. The apparatus preferably controls whether or not product order is placed,

In the present invention, two separate networks are being accessed, one for obtaining a product and the other for obtaining payment approval. The software interface effectively interfaces between the two networks, to confirm
5 that a transaction has been approved, to the product providing network.

Features and advantages of the present invention will become apparent from the following description of embodiments thereof, by way of example only, with reference
10 to the accompanying drawings, in which:

Figure 1 is a schematic block diagram of an ordering apparatus in accordance with an embodiment of the present invention, shown connected in a network within a system in accordance with an embodiment of the present invention;

15 Figure 2 is a schematic diagram of an ordering apparatus illustrating various components;

Figure 3 is a flow diagram showing various operations of the apparatus;

Figure 4 schematically illustrates a payment processing system and a method in accordance with the
20 present invention;

Figure 5 is a block diagram of architecture of the apparatus of Figure 1.

Referring to Figure 1, a "one stop shop" remote
25 ordering device 100 is illustrated schematically in block form. The device is arranged to enable a user to purchase a product which may be vended on site or which may be ordered from a host 101 to which the device 101 is connectable by a communications 102 (which may be a
30 telephone connection, for example, a dedicated line, or other type of network connection, such as the Internet), for later delivery. The device also enables the user to enter and purchase information or goods (eg from a connection 105 to the Internet 106) and is operable without
35 cash. Instead the users credit may be checked by connection 104 to a bank network 103 (eg EFT).

required connection.

Alternative embodiments of the device are arranged to dispense products from storage chambers or storage racks into a small product outlet bin.

5 Other devices 200, 300, 400 may be connected in the system to the host 101. These devices may be the same and offer the same functions as the device 100 or may offer varying functions. For example they may offer different types of products. One or more devices may not offer a
10 vending facility, but will offer an electronic ordering facility.

The device may in one embodiment be a simple PC based device which does not provide a vending facility, and allows a user to order services/goods over the Internet,
15 for example, from the host or from any other retail site available over the Internet.

Figure 2 is a front view of a device in accordance with figure 1, illustrating the hardware configuration. Preferably, the hardware comprises the following
20 components, reference numerals included in brackets indicate how the components relate to functional blocks of figure 1.

A magnetic card reader 210a (card reader 111) is provided for user identification. Note that a smart card
25 reader or the like may be provided in the alternative or in addition to the card reader 210A. A VDU (visual display unit) 210 (display 114), is provided to provide information to the user relating to operation of the device. In the preferred embodiment, a colour monitor 210 has a touch-
30 screen facility so that the data entry means 112 also comprises a touch-screen input. This facilitates interaction with the customer. A customised pin pad 208 and interface buttons 208a are also provided in the illustrated embodiment, but all the functionality of the
35 pin pad 208 and button 208A may be replaced by the touch-screen 210 in other embodiments and the pin pad 208 and

being removed from and placed in the compartments 201 (disclosure of detectors for detecting the opening of a compartment door and the placing of a product therein or removal of a product therefrom are disclosed in the above-mentioned PCT application, which is published and incorporated herein by reference and no further description will be given herein). The input and output controller card 227 detects whether a product is returned or removed from a compartment and provides appropriate signals to the processor 221. A receipt printer 228 (221) is also provided for printing user receipts.

The keypad 208, 208A, may be any convenient type of keypad which will enable a user to carry out operation of the device in accordance with the following description. Generally, it will comprise numeric keys 0 to 9, scroll keys, to enable scrolling of a display appearing on the screen 210 and selection keys 208A to make a selection of a particular item appearing on the screen next to the particular key 208A. As discussed above, where a touch-screen interface is provided, as it is in the preferred embodiment, some keys may not be necessary or the keyboard may even be dispensed with entirely.

A bar code scanner 229 is also provided for scanning bar codes to identify products, (product identification means 117).

It will be appreciated that much of the control of the device will be implemented in software, for control of operation of the hardware of the device in accordance with this embodiment. A detailed description of the software configuration is not necessary. The functionality of this device may be software implemented in any number of ways, using standard software tools available to the skilled software engineer. This description describes functional requirements for the device and is sufficient to enable a skilled person to implement appropriate software.

The security identification feature is particularly effective for controlling the ordering and delivery of products over the Internet, where before there has previously been little or no effective security for
5 controlling the product delivery. The apparatus in accordance with the present invention acts as an intelligent delivery device, which can determine whether or not any user is entitled to receive a particular product.

Where a vending facility is also provided, as it is in
10 the case of the described embodiment, the security identification means is useful in determining whether or not a particular product should be vended to a particular person.

A database containing security information may not be
15 kept and all the security information may be obtained from an ID means (such as a driving license) scanned by the security identification means 119. Any person with the required ID means could then access the device, order goods over the network (Internet), etc.

20 The security identification feature may also be applied to a stand-alone vending device to enable/disable product delivery (i.e. by "stand-alone" is meant a device not connected to a network).

As also discussed in the preamble, another problem
25 with presently available automated vending systems and in particular for commerce carried out over communications networks such as the Internet, there is the possibility of avoidance of tax or duty when the electronic ordering takes place across state and/or country borders. In this
30 embodiment of the invention, the database 115 includes a database on tax and duty information for the particular locality where the device 100 is installed. The amount of tax and duty for the particular locality is added by the control means to the pricing of the particular products
35 which are able to be ordered or vended via the machine. Once a product has been ordered over the Internet, for

Referring to Figure 4, a payment processing method in accordance with an embodiment of the invention is illustrated. The apparatus includes a card reader 111 for reading credit card, smartcard or bankcard details. The architecture of the device (Figure 5) also includes payment authorisation and processing software, which interfaces with the card reader and also interfaces with a payment processing module 120 which is arranged to carry out a payment approval transaction or payment transaction via the secure payment processing network. The payment processing module 120 is in effect a peripheral of the device 100 and can provide all the bank security, etc, normally required by secure payment processing networks, such as EFT. For example, the payment processing module may be commissioned by an account acquirer such as a bank and may include security information, encryption, etc. The payment authorisation processing software in the device 100 interfaces with the device to either enable or disable ordering and/or delivery of goods depending on the result of the payment processing transaction. Again, this feature particularly suits the payment of goods/services ordered over relatively insecure communications networks such as the Internet 106. At present, users are generally required to give their credit card details on the Internet and this can result in theft and fraud.

In operation, a user 500 accesses the machine 100 and selects goods/services, which may be selected and ordered over the Internet 106 or over other communications networks. He is then required to make payment via the card reader 111 and payment processing module 120. The payment processing module makes a local phone call to obtain approval or cause the transaction to occur and funds are collected from the user's bank 100 (or collected at a later date if the transaction is not real time). The funds are passed on to the host 101 from whence they will be used to settle with a vendor or merchant providing the goods 502.

description will be given here.

In the next step 805, the user selects the product he requires (either goods/services or both) by actuation of the input means 112 (which is a touch-screen in the preferred embodiment). Alternatively, the user enters a card and/or PIN number unique order number to reference a previously placed order where stock may be reserved and is being held for the user for a specified time period.

The control means 110 then makes a decision, from the security information available for the user, and from knowledge of the product, whether the particular product that has been selected should be supplied to the user, step 900). If the user should not be supplied with the product, if he is under age, for example, then the process is referred back to step 805 and the user is given a chance to select an alternative product. If the security information is adequate for the product to be provided to the user, the process proceeds onto the payment processing step 901. If an order has been placed using a PC attached to the Internet and recorded and communicated to the device, where the order is prepaid or where payment is authorised, the payment processing step is avoided. Whether the product is purchased over the Internet (or other communications network) or is vended locally at the device, the payment processing transaction is the same, by way of the secure network described above. Once payment approval has been received the control means makes determination as to whether the product is available locally or remotely, step 806.

If the product is available locally, in the next step 807 the product is dispensed from one of the storage locations 201, the control unit operating a latch mechanism to the particular storage location 201 to enable the user to open the specified door or to access the delivery bin where products are dispensed from the storage chamber within the device. The user then takes the product. A

device. The architecture includes payment authorisation and processing software 600, which has been described above. The architecture also includes OLE automation which utilises Microsoft® message passing standard facilitates non-call module removal and replacement. It also includes a user interface which has already been somewhat described above and is described in previous applications, controlling interfacing with the user. The software architecture allows for multiple user interfaces e.g. a consumer user interface is the default, however, a restockist user interface may appear when a restockist enters his card, a technician interface may appear when the technician card is inserted. A data manager performs all user interface database operations, including interface of security information with the control means 110. An event manager controls processes within the device facilitates changes to process sequences by using a state-transition table. The shopping basket service architecture maintains a customer selected products requests card authorisation, prints receipts and requests that "take now" (vended on site) items be dispensed from the storage and dispensing means 116. The device manager controls interaction with the apparatus peripherals, e.g. the card reader and door sensors and facilitates peripheral removal and replacement. The communication manager connects the apparatus to the host and downloads data from the host to the device and also uploads data from the host to the device. The watch dog monitors the operation of the apparatus and intercepts software, performs error housekeeping, gathers error information and re-boots the system when required.

Although the present invention has been described in relation to a complex delivery apparatus which also includes a vending function, it will be appreciated that a PC based apparatus without a vending function could still incorporate features of the present invention. The present invention is not limited to a device which must also

the location of delivery of product, and secure payment.

Variations and/or modifications may be made to the invention as shown in the specific embodiments without departing from the spirit or scope of the invention as
5 broadly described. The present embodiments are, therefore, to be considered in all respects as illustrated and not restrictive.

8. A method of applying tax or duty in remote retailing of products, comprising the steps of storing information on tax or duty and enabling access by the apparatus to that information, and adjusting the sales price of products offered for order in accordance with the tax or duty information.

9. A product ordering apparatus, including a control means for controlling ordering of products, input means by which a user may select a product, and payment processing means for processing payment by a user by a separate and secure payment processing network, the payment processing means including an input means for inputting secure user account information, and means for enabling or disabling an order on processing of a user payment via the separate network.

10. A method of payment processing for products ordered over a communications network such as the Internet network, comprising the steps of requesting account information from a user of the network and then processing the payment using the account information and using a separate, secure network, and enabling the ordering of products over the communications network depending on the result of the payment processing via the separate secure payment processing network.

11. A product ordering apparatus, including a control means for controlling ordering of products over a computer network, such as the Internet, input means by which a user may select a product, and payment of processing means for processing payment by a user by a separate and secure payment processing network, the payment processing means including an input means for inputting secure user account information, and means for enabling or disabling an order on processing of a user payment via the separate network, whereby a user may order product from a network, such as the Internet, and pay via the separate, secure network.

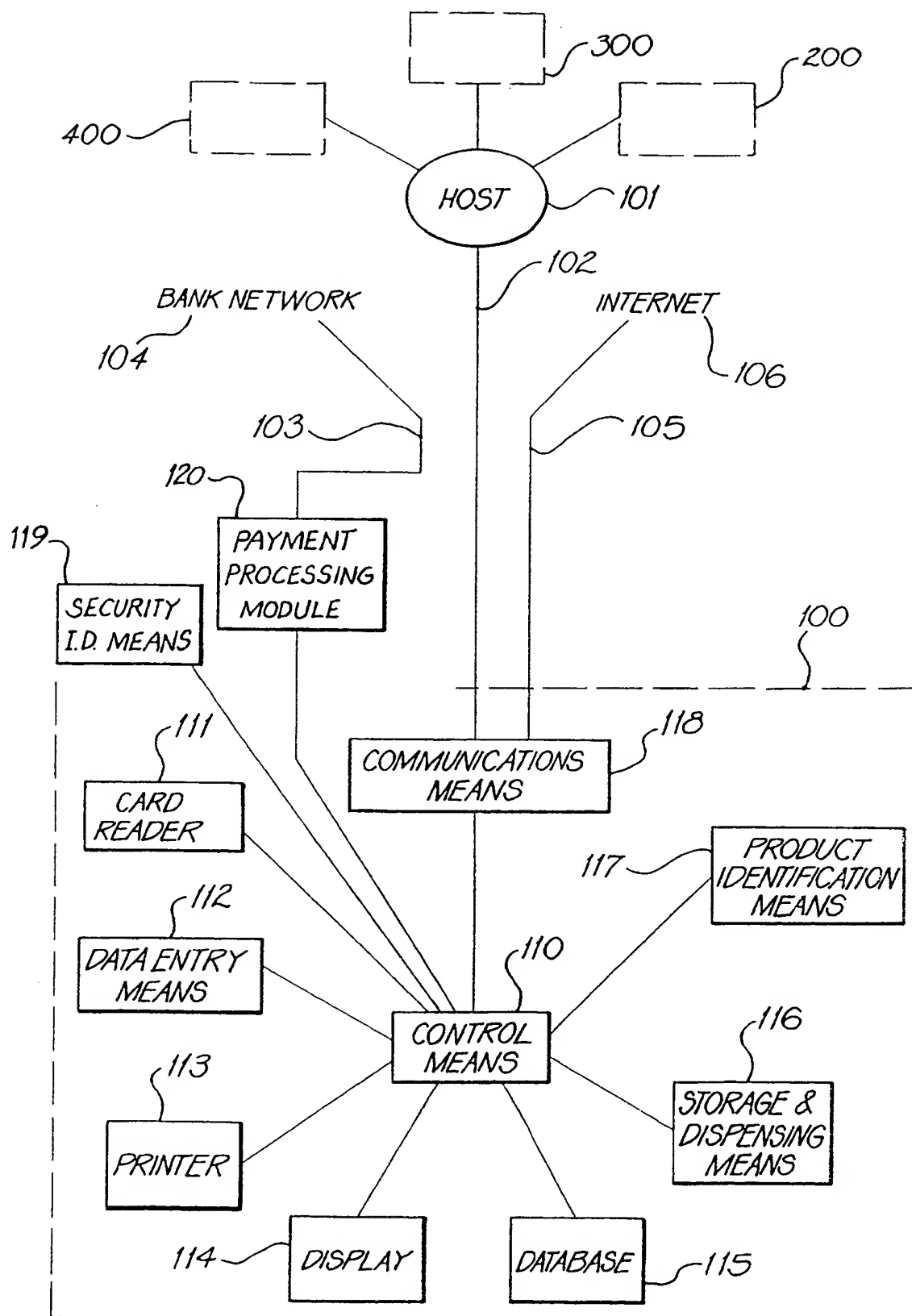


FIG. 1

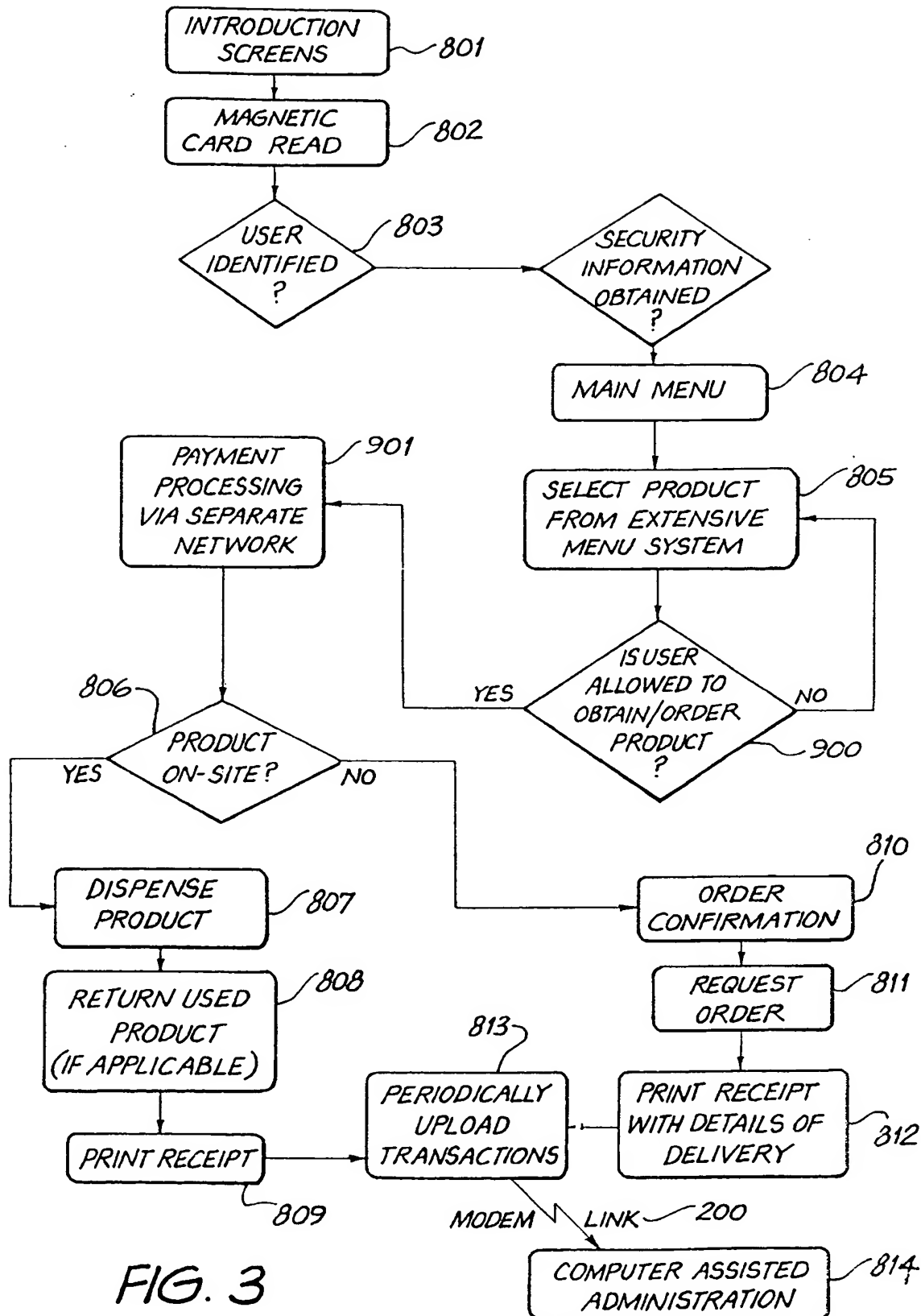


FIG. 3

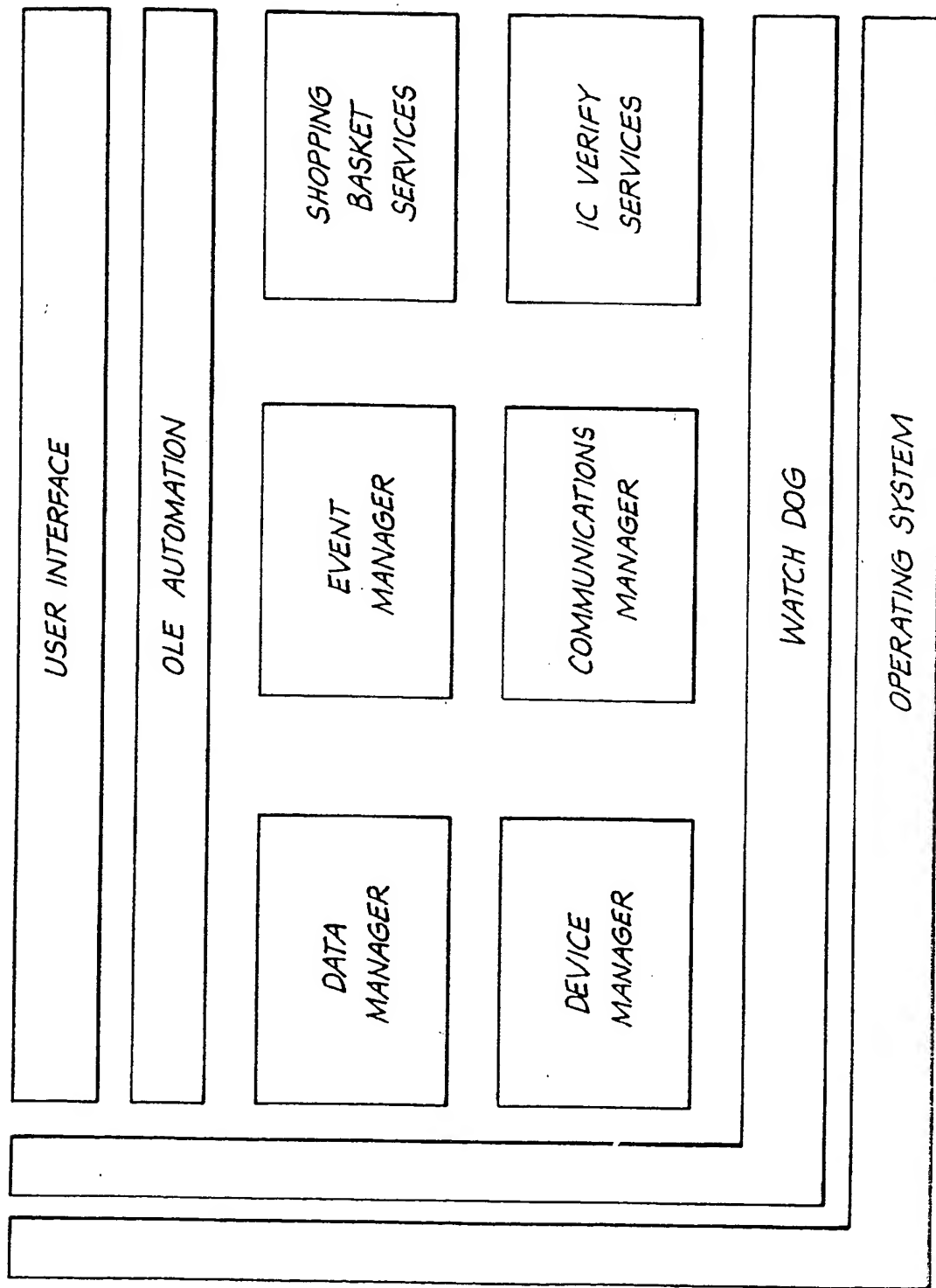


FIG. 5

INTERNATIONAL SEARCH REPORT

international application No.

PCT/AU 98/00655

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category ^a	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4947028 A (GOR OG) 7 August 1990 whole document	1/3, 9-15
X	US 4896024 A (MORELLO et al.) 23 January 1990 whole document	1-3, 9-15

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU 98/00655

Continuation of Box II

Claims 4-8 are directed to a product ordering apparatus or method whereby information on the taxes and duties dependent on geographic location is stored, and this information is used to adjust the sale price of a product dependant upon these local taxes and duties for that location. I consider that the adjustment of the sale price of a product based on the taxes and duties imposed in a particular geographic location is a second special feature.

Since the above mentioned groups of claims do not share any of the special technical features identified, a "technical relationship" between the inventions, as defined in PCT Rule 13.2 does not exist. Accordingly the international application does not relate to one invention or to a single inventive concept. Consequently this report is based on the first mentioned invention only as defined in claims 1-3 and 9-15 only.